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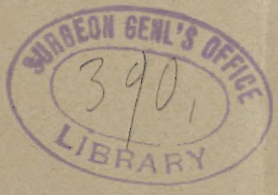

THE RELATION OF RHEUMATISM AND CHOREA.

II.

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A DISCUSSION on the relation of rheumatism and chorea necessitates some consideration of all the factors concerned in the production of chorea. The etiology of that peculiar disorder has for many years been a matter of especial interest to the profession. Innumerable observations have been made and reported, but strange to say the divergence of opinion seems to be as great as it was years ago. We expect divergence of opinion in medicine, but here we find it in an exaggerated degree. Within two years a prominent writer has reported chorea as due to fright in over fifty per cent. of his cases and could obtain a history of rheumatism in only eight cases in seventy. Another found fright as a cause in but six cases in eighty, and still another in the same city in fifteen cases in eighty. The one believes that rheumatism is an active causative factor in a large proportion of cases, the other that there is no evidence of cause and effect, though the two diseases often coëxist. It is impossible to believe that in one set of cases fright was a cause in

over fifty per cent. and in another but seven per cent.; that in one rheumatism was a cause in eleven per cent.; in another in seventy-three per cent. Such different interpretation of virtually the same cases and facts leads inevitably to the belief that some radical error exists somewhere, either in methods of observation or in the power to generalize and draw correct conclusions from data.

In approaching the subject, therefore, I first endeavored to ascertain, if possible, what this error was and quickly came to the conclusion that it lay in widely differing opinions regarding the symptoms of rheumatism in children. The neurologist is inclined to lay much stress upon fright, injuries, and nervous conditions and to ignore the importance of rheumatism. He seems inclined to call nothing rheumatism that is not marked by distinct articular inflammation, a position that is now considered untenable by most workers in pediatrics. Those who are most familiar with children most thoroughly appreciate Dr. Jacobi's statement that pediatrics does not deal with miniature men and women with reduced doses and the same diseases in smaller bodies. Members of this society will, I think, agree that rheumatism is a disease that manifests itself very differently in the child and in the adult. A condition which in the adult would be considered subacute and unimportant in the child is common and may be of the utmost gravity.

It is difficult to make a close classification of rheumatism in children. I have included as acute all cases marked by joint pain and tenderness with swelling and frequently redness, accompanied by fever or feverishness. By subacute is meant a disease marked by joint pains, stiffness or lameness, but without redness and with no appreciable fever. Under the head of growing pains I have not included all the pains which commonly go by that name, but those only in which there were confirmatory symptoms, as recurring urticaria and tonsillitis or a cardiac murmur. They were present in twenty-two cases, in sixteen of which there was also a history of acute or subacute attacks. This leaves but six cases of

simple growing-pains which are used in making up the statistics, all of which, I believe, were truly rheumatic.

I have a record of one hundred and nineteen cases of chorea but in many the history is very imperfect. Thirty-nine of these were taken from the history books of the Northwestern Dispensary at New York through the courtesy of Dr. Holt, twenty-nine were patients at the New York Polyclinic. The remainder were from my private practice, and classes at the Northwestern Dispensary and Bellevue Hospital.

A study of age, sex and month of development proves little or nothing regarding the relation of chorea to rheumatism. Thirty-one, or 24.4 per cent. of these patients were males, and eighty-eight or 75.6 per cent. were females. The youngest was four years of age, the oldest fourteen years. Six were under five years; sixty-two between five and ten years; fifty-one between ten and fourteen years. More cases developed in June than in any other month, which shows a record of fourteen. February was the smallest month with a record of five. More cases developed during April, May and June, than during any other quarter.

The personal history regarding chorea and rheumatism is complete and satisfactory in eighty-eight cases. Among these eighty-eight patients there was a history of acute rheumatism in sixteen, of subacute in twelve, of growing-pains in six, a total of thirty-four with antecedent rheumatic history. Fifteen patients had acute rheumatism and three subacute accompanying the chorea or developing within a week of its onset. Of these, nine had had no previous attack. Twelve patients developed rheumatism at a period greater than a week subsequent to the onset of the chorea. Of these, five had given no previous rheumatic history. The time of development was twelve days, six weeks, two months, three months and six months, after the chorea. Antecedent arthritis is known, therefore, to have been present in 31.8 per cent. of the cases of chorea; concurrent arthritis in 20.2 per cent., ten per cent having had no previous rheumatic

manifestations; and subsequent arthritis in 13.6 per cent., 5.7 per cent. having had no previous rheumatism. Rheumatism appeared in some from either before or after the chorea in 54.5 per cent. of all the cases.

Not only is the intimate relationship of chorea and rheumatism demonstrated by generalizations of this character but it is made evident by the study of individual cases. It seems irrational to say, as some do, that only an accompanying or immediately preceding arthritis can have a causative relation. Take the following case:

Chorea and acute rheumatism occurred in a child of eight years. One year later chorea developed without rheumatism, five weeks later rheumatism and endocarditis appeared.

Was this second attack of chorea less rheumatic than the first? Can there be doubt as to the character of the chorea in the following cases?

I.—Growing pains for several months; chorea; acute articular rheumatism six months later.

II.—Chorea at four years of age; chorea at six years without cardiac; acute rheumatism four months later; joint pains, tonsillitis, endocarditis, three months later.

III.—No history of rheumatism; June 5th, chorea; June 17th, acute rheumatism; September, acute rheumatism; December, chorea; January, tonsillitis; March, chorea and rheumatism.

Although it is quite probable that chorea itself may generate endocarditis, its close relation with cardiac disease is confirmatory of its intimate association with rheumatism. A cardiac murmur developed in thirty-two out of eighty-one chorea patients, or 39.3 per cent. In a recent study of one hundred-and-thirty-five cases of heart disease I found chorea in forty-one cases, or 30.3 per cent. being clearly associated with rheumatism in thirty-three cases.

The importance of a family history of rheumatism as regards chorea is quite uncertain. A rheumatic history in one or both parents was obtained in thirty-eight per cent. of these cases. The father alone was rheumatic in

sixteen cases, the mother in fifteen, both father and mother in twelve. In but four cases giving a distinct rheumatic family history did the choreic child fail to give a personal history of rheumatism or to develop a rheumatic attack either with or subsequent to the chorea. The family histories themselves offer strong proof of the fact that even in the most distinctly rheumatic cases there is something in addition—a neurotic element. Where chorea appears in several members of the same family, as far as my observation has extended, that family is always a rheumatic one. There is also apt to be a history of neuroses—hysteria, epilepsy, convulsions in infancy, or, what for want of a better term is known as "nervousness."

One family history is worthy of record—A grandmother had acute articular rheumatism, and was said to be "nervous." Among her six children five are known to have had rheumatism, two died of cardiac disease, two had chorea. Many of her grandchildren have had rheumatism more or less severe, and five have had chorea. I have treated three of these with an aggregate of eight attacks of chorea.

But nine cases can certainly be said to have been precipitated by fright. I have investigated these with especial care to ascertain if in reality they were not rheumatic, the fright being only incidental. In but three could a rheumatic connection be established. The remaining six gave no history or evidence of rheumatism.

Overwork at school and anxiety over lessons and examinations seemed to be the exciting cause in three nervous, anæmic girls. Two cases apparently depended upon difficulty in establishing of the menstrual functions. In one, a girl of fourteen, chorea of twelve weeks standing which had continued unabated in spite of treatment suddenly ceased within the space of three days after the beginning of the first menstruation. Two cases of extreme phimosis apparently presented marked illustrations of "reflex chorea." They were operated upon, one with but partial relief of the symptoms, the other with almost

complete relief for two weeks when the chorea returned with as much activity as before the operation. In a considerable number of cases no cause whatever could be discovered.

A somewhat striking fact was developed in connection with treatment which may possibly have some bearing upon etiology. Antipyrine was given to a number of patients. In a few cases the results were brilliant, and examination shows that they were of the non-rheumatic class. It succeeded best in the nervous, hysterical, and overworked patients in whom the rheumatic element was doubtful. It failed most signally in the most marked rheumatic cases. In these cases a change to Fowler's solution was usually followed by more or less decided improvement. The numbers treated were not large enough to warrant any positive statement, but they certainly suggest that the disease differs somewhat according to the exciting cause.

The relation, it seems to me, between rheumatism and chorea is a very close one and the question arises whether there is any chorea without rheumatism. Is there such a disease as fright chorea or hysterical chorea? I believe that there is, in the same sense that there is a rheumatic chorea. A study of the disease leads strongly to the belief that there is some underlying predisposing cause aside from rheumatism, fright, or hysteria. A dozen children have rheumatism and no chorea. The thirteenth has a mild attack of rheumatism and develops a severe chorea. The children in certain families are almost certain to have chorea if they contract rheumatism. Ten children are frightened by a dog and never have chorea; the eleventh at once develops a nervous disorder which increases in severity for two weeks and lasts for six months. A hundred children are scolded by their mothers with no perceptible results of any kind. One of my patients was scolded by a mother who had herself had chorea and at once developed an attack. That there is some predisposing neurotic element underlying all this I thoroughly believe. What it is I do not know. Not

every one exposed to the bacillus of tuberculosis acquires the disease. That indefinite factor we call predisposition is lacking. Not every child suffering from rheumatism or subjected to fright has chorea. He is not predisposed to it. I should class rheumatism, fright, hysteria, excitement, pregnancy, not as all-powerful agents for the production of this disorder but rather as exciting agents for the production of a disease in subjects predisposed to it, the most universal and potent of which is rheumatism.